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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/663,320

Filing Date: September 16, 2003

Appellant(s): BUCZEK ET AL.

Andrew L. Oltmans
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 23, 2007 appealing from the Office action mailed September 1, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Ground 1:

Claims 17-19, 21-23, 26-28, 30-32, 34, 36, and 38-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claims 17, 26, and 32, lines 15-16 of each, the limitation "the particles being physically separated from one another" is not enabled in the specification. Upon close review of the specification, it is the Examiner's position that there is no teaching how to make the claimed invention, specifically how to make and maintain the particles physically separated from one another. It is noted that Figure 10 (which is the only figure depicting the claimed embodiment) illustrates that the particles are physically separated from one another, as argued by Applicant, however there is nothing in the specification enabling an artisan having ordinary skill in the art how or why the claimed separation of particles in a fluid medium would be achieved. In a typical fluid medium containing non-spherical metal particles, at least some of the particles would be touching or abutting since the particles are randomly mixed in the fluid. For the reasons mentioned above, it would require undue experimentation for one of ordinary skill in the art to achieve the claimed invention.

Ground 2:

Claims 17-19, 21-23, 26-28, 30-32, 34, 36, and 38-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 17, 26, and 32, lines 15-16 of each, the phrase "the particles being physically separated from one another" added in the amendment of July 11, 2005 appears to be new matter. Since separation of particles is not discussed in the specification, it appears that the complete particle separation illustrated in Figure 10 is merely an exemplary drawing. Given the lack of description or guidance in the original specification for achieving physical separation as depicted in the Figure, the specification does not convey that applicant had possession of this subject matter as now claimed.

(10) Response to Argument

Ground 1:

Applicant argues that there is no indication in the specification that the figures do not represent the present invention and the Examiner has not pointed to any evidence establishing that the figures do not represent the present invention. The Examiner disagrees. There is no teaching how to make the claimed invention, specifically how to make and maintain the particles physically separated from one another. While the drawings illustrate physical separation, there must be some teaching to guide one of

ordinary skill in the art to make the invention, i.e. how to provide physical separation between particles. The drawings do not provide such a teaching.

Applicant argues that the specification, as originally filed, and the Declarations of Andrew Skoog each provide specific examples and guidance teaching one of ordinary skill in the art how to make and use the invention. Applicant argues that particles, such as those disclosed on page 12, lines 7-8, in a medium taught at page 14, lines 27-29 or page 12, lines 13-14 would result in medium wherein the particles are physically separated as illustrated in Figure 10.

Due to the breadth of the claims, the claims are not commensurate in scope with Applicant's arguments or Declarations. The disclosure would not have guided one having ordinary skill in the art to have only selected particles containing aluminum in order to achieve the claimed invention – such is not disclosed or even suggested by the specification. The claims do not require the presence of a barrier layer, such as a naturally occurring oxide, or even the inclusion of aluminum in the metal particles. The claims are broadly directed to the use of any non-spherical metal particles in combination with any non-metallic medium. It is the Examiner's position that not every combination of a non-metallic medium having non-spherical metal particles therein would result in a fluid condition where the particles are all physically separated from one another.

The nature of the claimed invention pertains to a method of orienting non-spherical metal particles to an article surface. The non-spherical metal particles are disposed in a fluid medium with a selected viscosity to provide a selected surface

tension in the medium. The fluid medium is maintained for a time sufficient to orient the metal particles with the major dimension in a position along the article surface.

The state of the prior art for processes where non-spherical metal particles are deposited on an article is described in the specification. The prior art referenced in the specification discloses methods for orienting non-spherical metal particles, such as flakes, onto an article in a direction of a magnetic field, but do not disclose any such means of physically separating the particles from one another in a fluid medium. In a typical fluid medium containing non-spherical particles, the particles are randomly mixed in the fluid, thus it would be unpredictable and difficult to control the physical separation of particles in the medium. Therefore one skilled in the art could not readily anticipate the effect of using any non-spherical metal particles in any non-metal medium to deposit non-spherical particles onto an article wherein said particles would be physically separated from one another.

The amount of direction provided by the inventor and the existence of working examples would not be sufficient for one of ordinary skill in the art to achieve the physical separation of particles as claimed without undue experimentation. Applicant provides direction to deposit non-spherical particles, such as Fe-alloys, or more specifically Fe-Co-Al material, disposed in a non-metal medium, such as a water base ceramic binder, or more specifically epoxy resin, onto an article surface. Little is known in the prior art about the nature of the invention and the art is unpredictable, therefore more detail would need to be provided for one skilled in the art to make the invention using any non-spherical metal particles disposed in any non-metallic medium without

undue experimentation. Applicant further argues that the physical separation of the particles is due to the selected surface tension of the particle and the selected viscosity of the medium. The specification and Declarations provide no direction of how to choose a surface tension and viscosity resulting in physical separation of particles, what are exemplary values or ranges that would provide the claimed separation, etc. An artisan having ordinary skill in the art would not know, using the disclosure as a guide, what specific materials and conditions are required to make the coating medium such that a barrier layer is formed around the particles resulting in physical separation. The descriptions cited in the Declarations provide no mention of the physical separation of particles, much less selecting a surface tension of the selected particle and viscosity of the coating medium such that physical separation is achieved.

Due to the aforementioned factors, there would be an extraordinary amount of experimentation required to determine which combinations of non-spherical metal particles and non-metallic medium materials would result in the particles being physically separated from one another in the fluid medium. Thus, selecting an appropriate viscosity and surface tension, and also selecting appropriate particle and medium materials, to achieve the claimed invention would require an extraordinary amount of undue experimentation.

Ground 2:

Applicant argues that the limitation "the particles being physically separated from one another" finds direct support from Figure 10. It is noted that Figure 10 clearly shows separated particles. However, since the separation of particles is not discussed in the

specification, it appears that the particle separation illustrated in Figure 10 would merely be an exemplary drawing. Due to the lack of description and guidance in the original specification for achieving physical separation as depicted in the Figure, the specification does not convey that applicant had possession of this subject matter as claimed.

Applicant further argues that the cited examples in the specification (page 12, lines 7-8 and 13-14; page 6, lines 11-15) implicitly require particles to be separated, i.e. an oxide layer. Applicant states that the cited examples use particles containing aluminum and thus, would necessarily have particles that are physically separated by a natural occurring oxide layer. The Examiner notes that there is no mention of a barrier layer such as an oxide layer existing on the particles in the specification. Therefore, the disclosure would not have guided one having ordinary skill in the art to have only selected particles containing aluminum in order to achieve a natural occurring oxide layer resulting in the physical separation of particles from one another.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

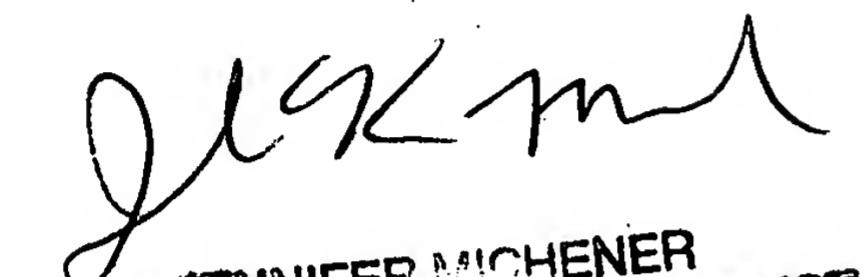
Respectfully submitted,

Elizabeth Burkhart 

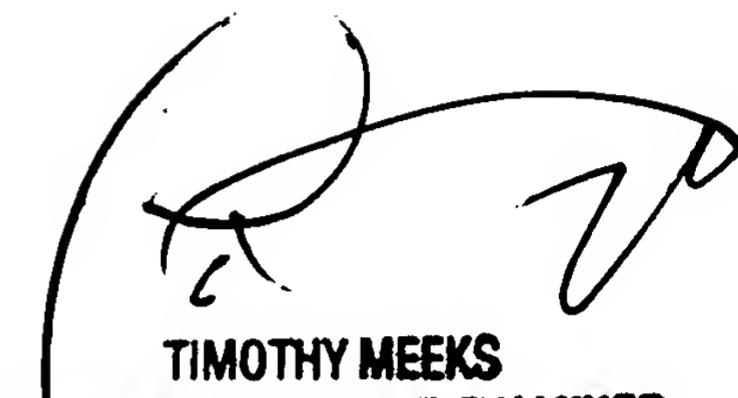
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Timothy Meeks

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JENNIFER KOLB-MICHENER
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TIMOTHY MEEKS
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